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AFRICAN MUSCIDAE.—V

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The present paper contains descriptions of a number of undescribed forms, and keys to the known species belonging to several genera. The preceding papers in this series are contained in American Museum Novitates Nos. 738, 776, 788 and 931.

Neodexiopsis colorata, new species

Reddish yellow, brown and cinereous; abdomen brown and yellow fasciate; legs almost all yellowish. Length, 5 to 5.5 mm.

MALE.—Head black in ground color, only the facial ridges yellowish. Front brown pollinose, in some lights appearing opaque black, the short ocellar triangle paler brown; parafrontals cinereous, somewhat brownish opposite the ocelli. Three pairs of strong frontals and one or two weak pairs; ocellars moderately long; verticals long, the outer verticals moderately long and divergent. Occiput cinereous. Face and cheeks cinereous white pollinose, the cheeks and parafacials narrow. Vibrissae long and strong. Palpi reddish yellow with brownish apices. Basal antennal segments brownish yellow, the third black. Arista brown, very short plumose.

Thorax yellowish, the pleura with some brown stains, the mesonotum and scutellum brown or black in ground color and thickly pollinose. Sides of the mesonotum yellowish, the disc with grayish-brown pollen and five blackish vittae, the outer vittae short and not conspicuous. Scutellum brownish gray, with four bristles and a few scattered setulae. Metanotum black, grayish pollinose except posteriorly.

Legs reddish yellow, the tarsi somewhat darkened apically; posterior four femora usually with pale brown preapical band. Bristles long and rather fine.

Wings cinereous hyaline, sometimes with brown tinge. Costal spine absent. Squamae whitish. Halteres yellow.

Abdomen reddish yellow, with brown fasciae dorsally. Basal half of the first segment with the depression and a medium vitta brown, the brown vitta connected with a broad brown fascia lying mostly behind the middle of the segment, its sides narrowed and separated from the posterior margin of the segment by a broad, interrupted posterior fascia. Second to fourth segments each with a broadly interrupted basal and apical yellow fascia, the black on the fourth segment sometimes greatly reduced. The small fifth segment and genitalia are yellowish or yellowish red. Bristles on the sides of the abdomen long; third and fourth segments each with a row of discals on the posterior half. Pale parts of the tergites very thinly whitish pollinose.

FEMALE.—Agrees with the male but the abdomen is not so slender and tapers apically.

TYPES.—Holotype, male, and allotype, female, Vumba Mountains, Southern

Rhodesia, March, 1935. Paratypes, two males taken with the holotype; male, and two females, Chirinda Forest, Southern Rhodesia, November, 1930, all collected by Alexander Cuthbertson.

This species is readily distinguished from the others in the genus by its coloration.

HYDROTAEA DESVOIDY

DESVOIDY, 1830, Mem. Acad. Roy. Sci. Inst. France, II, p. 509.

Seven species are known from Africa while an eighth is doubtfully placed in the genus.

TABLE OF SPECIES

- 1.—Eyes densely long haired.....2.
Eyes sparsely short haired or bare.....3.
- 2.—Mesonotum blackish, unicolorous.....*fumifera* Walker.
Mesonotum cinereous with a broad postsutural black band and three anteriorly united black spots in front of the suture, the median spot extending to the suture.....8.
- 3.—Mesonotum strongly bicolored, from posterior view, cinereous in front of the suture and before the scutellum.....4.
Mesonotum unicolorous or nearly so.....5.
- 4.—Abdomen broadly yellowish basally; parafacials and parafrontals polished black.....*melliventris* Malloch.
Abdomen black in ground color; parafacials pollinose.....*maculithorax* Stein.
- 5.—Abdomen and legs rusty reddish yellow.....*tersa* Wiedemann.
Abdomen and legs black.....6.
- 6.—Posterior femora curved, swollen on the under side apically.....7.
Posterior femora straight and not swollen ventrally.....*nigribasis* Stein.
- 7.—Squamae whitish; middle femora without blunt-tipped bristles on the posteroventral surface.....*longipila* Stein.
Squamae brownish; middle femora with about six blunt-tipped bristles near the middle on the posteroventral surface.....*femorata* Stein.
- 8.—Abdomen with the broad black segmental fasciae basal.....*fasciata* Stein.
Abdomen with the broad black segmental fasciae apical.....*maculithorax* Stein.

Hydrotaea fumifera Walker

Anthomyia fumifera Walker, 1856, 'Dipt. Saunders.,' p. 358.

Anthomyia maura Walker, 1856, 'Dipt. Saunders.,' p. 364.

STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 193.

Male, East London, S. Africa, August 9, 1922 (H. K. Munro).

Hydrotaea nigribasis Stein

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 507.

MALLOCH, 1924, Ann. Mag. Nat. History, XIV, p. 259.

Known only from Natal.

***Hydrotaea longipila* Stein**

STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 194.

Described from Natal.

***Hydrotaea femorata* Stein**

STEIN, 1914, 'Voy. Allauad and Jeann.,' Dipt., p. 117.

MALLOCH, 1924, Ann. Mag. Nat. Hist., XIV, p. 259.

Described from British East Africa and recorded by Malloch from Natal.

***Hydrotaea fasciata* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 505.

Male, Addis Ababa, Abyssinia, August 8, 1920; female, Addis Ababa, August 18, 1920 (B. Brown); male, New Hanover, Natal, December 1, 1914 (C. B. Hardenberg). Previously recorded from Abyssinia, East Africa and Transvaal.

The female may belong with the following species. The abdomen is stained and I am unable to place it definitely.

***Hydrotaea maculithorax* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 506.

Four males from Addis Ababa, Abyssinia, July 5, and August 8, 12, 1920 (B. Brown).

Stein described only the female from Southern Rhodesia, stating that the eyes were sparsely, long haired. The males, which probably belong here, have the eyes thickly haired, the median black vittae on the mesonotum fused as in *fasciata*, the postsutural black fascia divided, when seen from behind, by two narrow cinereous vittae; median and apical segmental markings on the abdomen black.

***Hydrotaea melliventris* Malloch**

Ophyra melliventris Malloch, 1929, Ann. Mag. Nat. Hist., III, p. 550.

Male, Barberton, Transvaal, May 17, 1913 (H. K. Munro).

Malloch described this species from a single female and suggested that it might belong to *Hydrotaea*. The male has the first two abdominal segments yellow, the others black, although the apex of the abdomen is reddish and the third segment is very broadly yellow on one side. There is no evidence of staining. The anterior femora are quite typical of *Hydrotaea*. The species is easily recognized by the partly pale abdomen and the polished black parafrontals, parafacials and cheeks. The occiput and facial depression are cinereous pollinose.

Hydrotaea tersa Wiedemann

Anthomyia tersa Wiedemann, 1830, 'Ausser. Zweifl.,' II, p. 427.

The type locality is unknown but the type specimen is undoubtedly of tropical origin. Length, 7 mm.

MALE.—Head black in ground color, whitish pollinose; frontal lunule and palpi reddish in ground color, the lunule white; frontal vitta black, obliterated or linear for more than half the length of the front; front narrower than the ocellar triangle, with four or five pairs of short, fine bristles on the anterior third; ocellars well developed. Cheeks about one-tenth as wide as eye-height. Antennae reddish; arista practically bare.

Thorax blackish, moderately shining, from posterior view with the mesonotum appearing cinereous pollinose but partly stained so that it is not possible to determine whether there are dark marks on the median third behind the suture. No acrostical bristles; dorsocentrals probably 2-4 but I can make out only the two posterior post-sutural pairs. Sternopleurals 1-1. Scutellum cinereous pollinose, with two pairs of strong bristles, the sides bare.

Legs reddish yellow, the tarsi black, the posterior four coxae brownish. Front legs normal for the genus. Posterior tibiae with a tuft of black hairs on the ventral surface beyond the middle, the apical half of this surface with long, soft hair, the anteroventral surface with a row of short, fine brownish bristles on the apical half.

Wings with yellow tinge, the veins yellow. Squamae white. Halteres yellow.

Abdomen reddish yellow, yellowish pollinose, the bases of the segments with paler pollen; apices of second and third segments narrowly black, the fourth black in ground color on the apical half or more, the first with brownish tinged apex. Genitalia brown. Sternites brownish, pale pollinose, the apices paler. Hair and bristles black.

There can be no doubt that this is the type specimen and it is in very good condition although there is a little fungus growth. If the species is from Africa it may be readily distinguished from *melliventris* Malloch by the color of the mesonotum which appears as though it should be unicolorous, the less extensively black abdomen and more robust form.

OPHYRA DESVOIDY

Only two species are known from Africa, one of them occurring also in Europe and Asia.

TABLE OF SPECIES

- 1.—Lower squamal lobe pale, with blackish border *nigromarginatus* Stein.
- 2.—Lower squamal lobe without dark border *capensis* Wiedemann.

Ophyra nigromarginata Stein

STEIN, 1918, Ann. Mus. Nat. Hung., XVI, p. 193.

Described from Mauritius. Type in Vienna Museum.

Ophyra capensis Wiedemann

Anthomyia capensis WIEDEMANN, 1818, Zool. Mag., I, pt. 2, p. 46.

Anthomyia anthrax MEIGEN, 1826, 'Syst. Besch. Eur. Dipt.,' V, p. 161.

Anthomyia capensis WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 426.

Ophyra anthrax MALLOCH, 1923, Ann. Mag. Nat. Hist., XI, p. 666.

Two females, Balla Balla, Southern Rhodesia, February and March, 1931 (A. Cuthbertson); female, New Hanover, Natal, December 1, 1914 (C. B. Hardenberg).

This species has been going under the name *anthrax* despite the fact that *capensis* is the older name.

Ophyra melliventris Malloch belongs to *Hydrotaea*.

PHAONIA DESVOIDY

The following key includes the species I have been able to place in this genus.

TABLE OF SPECIES

- | | |
|--|------------------------------------|
| 1.—Eyes densely haired..... | 2. |
| Eyes bare or nearly so..... | 5. |
| 2.—Crossveins bordered with brown..... | <i>obscurinervis</i> Stein. |
| Crossveins not bordered with brown..... | 3. |
| 3.—Mesonotum cinereous with a broad black postsutural fascia and three presutural spots..... | 4. |
| Mesonotum black, cinereous pollinose with four black vittae..... | <i>peregrina</i> Malloch. |
| 4.—Femora without broad, black apical bands; eyes of male narrowly separated.... | |
| | <i>cuthbertsoni</i> , new species. |
| Femora with broad, black apical bands; eyes of male widely separated..... | |
| | <i>annulipes</i> Stein. |
| 5.—Two or three pairs of postsutural dorsocentrals..... | 6. |
| Four pairs of postsutural dorsocentrals..... | 15. |
| 6.—Only two pairs of postsutural dorsocentrals..... | <i>bieseta</i> Stein. |
| Three pairs of postsutural dorsocentrals..... | 7. |
| 7.—Anterior tibiae with only the apical bristles..... | 9. |
| Anterior tibiae with a posterior median bristle..... | 8. |
| 8.—Abdomen without shining paired spots..... | <i>virgata</i> Stein. |
| Abdomen with shining paired spots..... | ♀ <i>abnormis</i> Stein. |
| 9.—Abdomen with paired dorsal spots..... | 10. |
| Abdomen without paired dark spots..... | 12. |
| 10.—Scutellum grayish with yellow apex..... | <i>flavicornis</i> Stein. |
| Scutellum yellow, sometimes with brown spot on either side..... | 11. |
| 11.—Scutellum brown on the sides..... | <i>abnormis</i> Stein. |
| Scutellum wholly yellow..... | <i>bequaerti</i> , new species. |
| 12.—Thorax black in ground color..... | 14. |
| Thorax almost all reddish or yellowish in ground color..... | 13. |
| 13.—Mesonotum with a black vitta occupying almost the median third, or wholly yellowish..... | <i>vittithorax</i> Stein. |

- Mesonotum yellowish with gray pollen and vittae.....*suturalis* Stein.
 14.—Antennae and palpi blackish.....*vumbana*, new species.
 Antennae and palpi reddish yellow.....*aethiopica*, new species.
 15.—Second abdominal segment with a pair of strong marginals; upper frontal
 bristles much shorter than the ocellars.....*ocellaris* Malloch.
 Second abdominal segment without erect median marginals.....16.
 16.—Only three pairs of frontal bristles limited to the anterior third; mesonotum
 without brown vittae.....*munroi*, new species.
 Front with bristles extending to the anterior ocellus, the upper ones stronger than
 the ocellars.....17.
 17.—Mesonotum yellow with a black vitta between the acrosticals.....
 *capensis*, new species.
 Mesonotum rusty reddish yellow, with four brownish vittae...*rhodesi* Malloch.

***Phaonia annulipes* Stein**

Aricia annulipes STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 33.

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 477.

Phaonia magnifica MALLOCH, 1921, Ann. Mag. Nat. Hist., VII, p. 425.

MALLOCH, 1929, Ann. Mag. Nat. Hist., III, p. 552.

Male, Cookhouse, S. Africa, February 8, 1925; male, Tarkagatd, S. Africa, September 29, 1922 (H. K. Munro).

***Phaonia virgata* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 481.

Female, East London, Cape Province, September 11, 1922; two males and two females, East London, May 5, 9, 1923 (H. K. Munro).

***Phaonia vittithorax* Stein**

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 479 (Natal).

Female, East London, Cape Province, May 1, 1924; female, East London, April 29, 1923 (H. K. Munro); male, Salisbury, Southern Rhodesia, November, 1934 (A. Cuthbertson).

The female lacks the blackish dorsocentral vitta.

***Phaonia abnormis* Stein**

Spilogaster abnormis STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 49.

STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 478.

MALLOCH, 1921, Ann. Mag. Nat. Hist., VIII, p. 417.

MALLOCH, 1929, Ann. Mag. Nat. Hist., III, p. 552.

Male, Durban, Natal, July 31, 1917 (collector ?); male, Chirinda Forest, S. Rhodesia, November, 1930; twenty specimens of both sexes, Gurungwe and River Dande, S. Rhodesia, July, 1933, and one male from Vumba Mountains, March, 1935 (A. Cuthbertson).

The female of this species has a median posterior bristle on the anterior tibia, but there is seldom an indication of it in the male.

***Phaonia ocellaris* Malloch**

MALLOCH, 1929, Ann. Mag. Nat. Hist., III, p. 553.

Male, Isipingo, S. Africa, June 12, 1922 (H. E. Irving).

***Phaonia rhodesi* Malloch**

MALLOCH, 1929, Ann. Mag. Nat. Hist., III, p. 552.

Female, Betala, Liberia, October 13, 1926 (J. Bequaert).

***Phaonia cuthbertsoni*, new species**

Related to *annulipes* Stein but at once distinguished by the absence of black bands on the apices of the femora, the narrower front of the male, the partly reddish abdomen and the absence of blackish spots on the sides of the abdominal segments. Length, 9 to 9.5 mm.

MALE.—Lower half of the head reddish in ground color, the upper half black; pollen whitish, cinereous on the occiput. Front slightly narrower than the ocellar triangle, the reddish-brown vitta obsolete for almost half its length; five pairs of frontals anteriorly and one or two hairs, the parafrontals bare; ocellars long and strong; verticals absent. Cheeks wide; parafacials much narrower than the third antennal segment. Palpi and proboscis blackish. Antennae black, the basal segments brownish yellow; arista long plumose. Eyes moderately pilose.

Thorax dark in ground color, the broad lateral margins in front and the posterior third of the mesonotum, yellowish, the pleural sutures more or less broadly and the anterior third yellowish; pollen cinereous, the mesonotum with three large dull black spots in front of the suture, extending back from the anterior margin and a similarly colored broad fascia immediately behind the suture. Scutellum brown with cinereous yellow pollen on the apex between the bristles. Acrosticals 0-1; dorsocentrals 2-3; prealar more than half as long as the following bristle; sternopleurals 1-2.

Legs reddish yellow, the tarsi blackish; apices of the femora slightly brownish; anterior tibiae without posterior bristle; middle tibia with two posterior bristles.

Wings with grayish-yellow tinge. Squamae white; halteres yellow.

Abdomen with the first segment yellow except in the middle; second segment yellow with a brown median triangle that broadens posteriorly, and a pair of large, indistinct brown lateral spots; third segment with the lateral spots and dorsal triangle united so that there is very little yellow toward either side basally; fourth segment brown with the broad apex reddish yellow. Pollen yellowish, brown on the brown areas. On the under surface the sides of the last two tergites are broadly brown. Fourth segment with two pairs of discals. The hair is black except on the occiput below the neck.

FEMALE.—Front almost as wide as one eye, with six pairs of frontals, the anterior and two upper pairs strong; verticals and outer verticals strong; pleura almost all reddish in ground color, the scutellum with a larger yellow pollinose area apically. The pale part of the abdomen is more restricted and reddish although the pale pollen is similar in extent.

TYPES.—Holotype, male, Vumba Mountains, Southern Rhodesia, October 20, 1935 (A. Cuthbertson). Allotype, female, Vumba Mountains, January 12, 1937 (Major Drysdale). Paratype, male, Vumba Mountains, March, 1935 (A. Cuthbertson).

***Phaonia vumbana*, new species**

Black, with cinereous pollen, the abdomen with a brownish dorsocentral vitta. Length, 7 mm.

MALE.—Head cinereous pollinose. Front about as wide as the ocellar triangle, the velvety black frontal vitta wider than the parafrontals; six pairs of frontals and two hair-like ones above; ocellars rather short, the verticals not developed. Width of cheeks equal to the length of the third antennal segment. Parafacials as wide as the third antennal segment. Palpi blackish. Antennae black, the arista with long rays. Eyes bare or practically so.

Thorax cinereous pollinose, the mesonotum with four abbreviated dark vittae extending back from the anterior margin. Acrosticals 0-1; dorsocentrals 2-3; prealar two-thirds as long as the following bristle; sternopleurals 1-2; a number of hairs in front of the posterior spiracle. Sternopleura shining in front. Scutellum with a row of hairs below the level of the marginals.

Legs black, the femora with thin grayish pollen, their tips reddish; tibiae brownish. Anterior tibiae without posterior bristle, the median pair with two.

Wings with brown tinge, especially anteriorly. Costal spine short. Squamae yellowish, the knobs of the halteres brown.

Abdomen cinereous pollinose, in some lights with brownish dorsocentral vitta; third and fourth segments with row of discals, the second with a row of fine, erect marginals. Hair wholly black.

TYPES.—Holotype, male, and paratype, male, Vumba Mountains, Southern Rhodesia, March, 1935 (A. Cuthbertson).

***Phaonia aethiopica*, new species**

Black, the antennae and palpi pale orange, the femora dull reddish. Length, 6 to 6.5 mm.

FEMALE.—Face, cheeks and frontal vitta reddish or brownish red, the middle of the facial depression black; pollen cinereous, brownish on the parafrontals and cheeks; a dark spot opposite the base of the third antennal segment. Front narrower than one eye; six pairs of frontals, the upper two reclinate; a row of short, bristly hairs on the parafrontals; ocellars moderately long; outer verticals more than half as long as the verticals. Cheeks almost as wide as the length of the third antennal segment. Palpi and antennae pale orange, the arista black, with long rays. Eyes thinly short pilose.

Thorax black with cinereous or brownish cinereous pollen, the mesonotum with four weak darker vittae. Acrosticals 0-1; dorsocentrals 2-3; prealar more than half as long as the following bristle; sternopleurals 1-2; one or two setulae in front of the posterior spiracle. Scutellum cinereous or brownish cinereous pollinose, the lower edge with a few short, fine hairs on the basal half.

Legs reddish or reddish brown, the tibiae at times somewhat darker than the femora; tarsi black. Anterior tibia without posterior bristle, the middle ones with two or three.

Wings with cinereous or luteous tinge; posterior crossvein faintly clouded with

brown; costal spine not developed. Squamae tinged with brown and with brown border. Knob of halteres brown.

Abdomen with cinereous or brownish cinereous pollen, the dorsum somewhat darkened along the broad middle; only the fourth segment with discals.

TYPES.—Holotype, female and paratype, female, Vumba Mountains, Southern Rhodesia, March, 1935 (A. Cuthbertson).

***Phaonia bequaerti*, new species**

Related to *abnormis* Stein but readily distinguished by the wholly yellow scutellum and the wider front of the male. Length, 6.5 mm.

MALE.—Head blackish or reddish brown in ground color, the facial ridges and lower occiput yellowish; pollen white, cinereous on the occiput and cheeks. Front almost twice as wide as the ocellar triangle, the reddish-brown vitta exposed on its whole length. Six pairs of frontals, the anterior and upper two moderately strong; ocellars rather short. Cheeks slightly wider than the third antennal segment; parafacials narrow. Palpi and antennae reddish yellow; arista brown with long black rays, the base broadly reddish. Eyes bare.

Thorax reddish yellow, with pale ocher-yellow pollen, the mesonotum in some views with two geminate ferruginous vittae. Acrosticals 0-1; dorsocentrals 2-3; prealar about one-fourth as long as the following bristle; sternopleurals 1-2. Scutellum wholly yellow.

Legs yellowish red, the tarsi brown; front tibiae without posterior bristle, the middle ones with two.

Wings with luteous tinge. Squamae pale yellowish gray. Halteres pale orange.

First and second abdominal segments yellowish, the second with the broad apex, expanded laterally, and a median vitta blackish, the third and fourth blackish, the latter with broadly yellowish apex. Pollen cinereous, the bristles arising from dark spots; second to fourth segments each with paired, brownish or dark spots, those on the second segment large, subtriangular and extending the whole length of the segment, those on the third much smaller and reaching forward only to the middle of the segment; the spots on the fourth segment are broadly separated from the base and apex and are in the form of a pair of narrowly separated brown stripes. Third segment with or without a pair of discals laterally, the fourth with a row.

HOLOTYPE.—Male, Memeh Town, Liberia, August 29, 1926 (J. Bequaert).

***Phaonia munroi*, new species**

Related to *ocellaris* Malloch but readily distinguished by the absence of marginals on the second abdominal segment. Length, 6.5 mm.

MALE.—Head black, white pollinose, the facial ridges and back of the mouth yellow; pollen of occiput and cheeks gray. Front very narrow, the black vitta showing only anteriorly; three pairs of frontals in front, the front pair moderately strong; a pair of hair-like bristles in front of the ocelli, the ocellars long; verticals scarcely developed. Cheeks about as wide as the third antennal segment. Palpi and antennae reddish yellow; arista and its long rays black, the base broadly yellowish. Eyes bare.

Thorax reddish yellow, with pale ocher-yellow pollen, the mesonotum with four slightly darker vittae. Dorsocentrals 2-4; acrosticals 0-1; prealar fully half as

long as the following bristle; sternopleurals 2-2, the lower anterior very weak. Scutellum wholly yellowish.

Legs yellowish, the tarsi black; anterior tibiae without posterior bristle, the middle pair with two.

Wings cinereous hyaline, with very short costal spine. Squamae cinereous. Halteres yellow.

Basal two abdominal segments, and the base of the third laterally, yellow, the third and fourth brown; pollen cinereous yellow, becoming more brownish on the apical segments. Under surface almost all reddish yellow.

HOLOTYPE.—Male, Prospect, South Africa, March 19, 1923 (H. K. Munro). Returned to Mr. Munro.

***Phaonia capensis*, new species**

Related to *rhodesi* Malloch but with a black vitta between the acrosticals. Length, 7 mm.

MALE.—Head black in ground color, white pollinose, the occiput cinereous; facial ridges obscurely yellowish. Front as wide as the ocellar triangle, with seven or eight pairs of strong frontals, the upper two or three reclinate; ocellars weak; verticals scarcely developed. Cheeks a little wider than the third antennal segment. Palpi and antennae reddish yellow, the arista mostly brown, the rays long. Eyes bare.

Thorax yellowish, with a black vitta lying between the acrostical setulae, the sides of the scutellum with large brown spot. Acrosticals 0-1; dorsocentrals 2-4; prealar about one-fourth as long as the following bristle; sternopleurals 1-2. Pollen whitish, thin on the disc of the mesonotum.

Legs yellowish, the tarsi somewhat darkened apically. Front tibia without a bristle, the middle ones with two on the posterior surface.

Wings cinereous hyaline, the crossveins lightly clouded with brown. Squamae cinereous. Halteres yellow.

Abdomen yellow, the second segment with a pair of dorsal and lateral brown spots posteriorly; third segment and basal two-thirds of the fourth brown, the third with a pair of large, shining brown spots on the apical half or more. Pollen brown, thin and whitish on the yellow portions. Second and third segments with distinct discals, the fourth with a row; second segment with a row of weak, appressed apicals. Under surface almost all yellowish. Hair black.

HALOTYPE.—Male, East London, South Africa, August, 1924 (H. K. Munro).

HELINA DESVOIDY

The genus *Helina*, as at present understood, contains a large number of species, many of which can be segregated into rather homogeneous groups. However, the division of the genus appears to be unwarranted because of the many connectant forms between any groups established. The African species known to me are included in the following key.

TABLE OF SPECIES

- 1.—Anterior coxae reddish or yellow in ground color. 2.
- Anterior coxae mostly or wholly black in ground color. 7.

- 2.—Abdomen entirely yellow.....*cuthbertsoni*, new species.
Abdomen with blackish or brown markings.....3.
- 3.—Mesonotum cinereous with a broad black median fascia.....*lucida* Stein.
Mesonotum without black fascia.....4.
- 4.—Mesonotum partly shining ferruginous or castaneous....*castanea*, new species.
Mesonotum yellowish, with or without dark vittae.....5.
- 5.—Prealar bristle about one-third as long as the following bristle.....
.....*inferior*, new species.
Prealar almost two-thirds as long as the following bristle.....6.
- 6.—Eyes of male separated by less than the width of the ocellar triangle.....
.....*subsetosa*, new species.
Front of male distinctly wider than the ocellar triangle..*rhodesiana*, new species.
- 7.—Crossveins broadly clouded with brown.....*plurinotata* Stein.
Crossveins not conspicuously clouded.....8.
- 8.—Front tibiae with a posterior bristle near the middle.....10.
Front tibiae with only the apical bristles.....9.
- 9.—Femora reddish.....*versatilis*, new species.
Femora black.....*quadriseta* Adams.
- 10.—Mesonotum black with two broad cinereous vittae.....*lenta*, new species.
Mesonotum cinereous, weakly dark vittate.....*latifrons* Adams.

***Helina cuthbertsoni*, new species**

Black, the abdomen and legs yellow; third antennal segment whitish; tarsi brown. Length, 5 mm.

MALE.—Head black in ground color, whitish pollinose, the occiput cinereous; frontal vitta obsolete for most of its length; one strong pair of frontals immediately above the antennae and an additional weaker pair; ocellars moderately long. Cheeks narrow, black-haired except above. Parafacials linear. Proboscis brown; palpi yellow. Basal antennal segments reddish, the third very pale yellowish, almost whitish; arista brown, with long brown rays, the basal third yellow. Eyes bare.

Thorax black, cinereous white pollinose, from dorsal view entirely shining or at most slightly whitish. Dorsocentrals 2-3; acrosticals 0-1; prealar absent; two pairs of marginal scutellars; sides of scutellum bare; sternopleurals 1-2; hair black.

Legs, including the coxae yellow, the tarsi blackish; posterior femora with three strong anteroventral bristles apically and a row of fine, posteroventral bristles on the basal three-fifths; anterior tibiae without median bristles; middle tibiae with two short posterior bristles, the posterior pair with a short anterodorsal bristle near the middle and one on the posteroventral surface near the apical third.

Wings cinereous hyaline; veins brownish, yellow at the base of the wing; fourth vein straight. Squamae and halteres yellow.

Abdomen yellow, slightly shining, from posterior view with thin whitish pollen, the hairs and bristles black. Second to fourth segments each with a row of marginals, the fourth with a row of discals across the middle.

TYPES.—Holotype, male and one male paratype, Balla Balla, Southern Rhodesia, February, 1933 (A. Cuthbertson).

***Helina lucida* Stein**

Mydaea lucida STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 493 (Transvaal).

Male and female, Pretoria, Transvaal, August 20, 1912, and February 25, 1913 (H. K. Munro); male, Salisbury, Southern Rhodesia, August, 1929 (A. Cuthbertson).

***Helina castanea*, new species**

Reddish yellow and castaneous, the squamae grayish brown. Length, 7 to 7.5 mm.

MALE.—Head reddish in ground color, the upper half of the occiput black; pollen white, cinereous or cinereous brown on the occiput. Front linear, the vitta obsolete on about half its length; three pairs of frontals anteriorly and a pair of hairs in front of the ocelli; ocellars long. Verticals and outer verticals slightly differentiated. Cheeks somewhat wider than the third antennal segment; parafacials very narrow. Palpi and antennae pale orange, the brown arista long plumose. Eyes bare.

Thorax reddish, the dorsum castaneous brown, the pleura in part reddish brown, the sides of the mesonotum yellow in front of the suture. From posterior view the mesonotum is yellowish pollinose in front of the suture with three dark vittae, the median one narrow and not reaching the suture, the outer ones very broad; behind the suture there are three pale pollinose vittae, all of about equal width; pleura cinereous pollinose, the scutellum with pale pollen apically. Acrosticals 0-1; dorso-centrals 2-4; prealar two-thirds as long as the following bristle; sternopleurals 2-2.

Legs reddish yellow, the tarsi black, the apices of the posterior four femora sometimes broadly reddish brown. Anterior tibiae without posterior bristle.

Wings rather strongly tinged with brown; costal spine quite short and appressed, third vein usually with two fine setulae near the base on the lower surface. Squamae grayish brown with brown rim. Halteres yellow.

First abdominal segment reddish yellow or reddish, the second brown with the base narrowly pale, the apical segments dark brown. Pollen brownish yellow, white on the bases of the segments except medianly, the second and third segments each with a pair of large, nearly bare spots in some views. Third segment with two or three discs laterally, the fourth with a row.

FEMALE.—Front wide, brownish red, with five pairs of frontals, of which only the anterior pair is strong. There are only three sternopleurals in the single specimen of this sex.

TYPES.—Holotype, male, allotype, female, and paratype, male, Vumba Mountains, Southern Rhodesia, March, 1935 (A. Cuthbertson).

***Helina inferior*, new species**

Dull reddish yellow, the abdomen dark on the apical half or more. Length, 6 to 7 mm.

MALE.—Head black in ground color, the facial ridges and the occiput behind the mouth yellow; pollen white, cinereous on the occiput. Front much narrower than the ocellar triangle, the black vitta exposed for less than half its length; four pairs of frontals anteriorly and a pair of hairs in front of the ocelli; ocellars moderately long; verticals very feebly developed. Cheeks somewhat wider than the third antennal segment; parafacials linear. Palpi and antennae reddish yellow; arista yellow basally, with long black rays. Proboscis brownish red to yellow. Eyes bare.

Thorax yellowish, the dorsum somewhat darker; pollen pale yellowish on the pleura, cinereous yellow dorsally; mesonotum with four obscure brownish-red vittae,

visible from behind. Acrosticals 0-1; dorsocentrals 2-4; prealar less than one-third as long as the following bristle; sternopleurals 1-2. Scutellum with a few irregularly placed hairs below the laterals.

Legs reddish yellow, the tarsi becoming brownish red apically. Anterior tibiae without posterior median bristle.

Wings cinereous hyaline; third vein with two tiny setulae near the base on the under surface. Costal spine very small. Squamae grayish yellow, with pale border. Halteres yellow.

First abdominal segment and the base of the second laterally, yellow, the dorsum of the abdomen otherwise blackish in ground color. Pollen rather thick, cinereous; a pair of large, brownish spots on the second to fourth segments and an interrupted broad median vitta. Third segment with two or three pairs of discals laterally, the fourth with a row. Sternites and genitalia yellow. The brown markings are not sharply limited.

FEMALE.—Face wholly yellow in ground color. Front dull orange, with a darker, slightly shining triangle extending forward to the anterior third; five or six pairs of frontals, the upper two moderately strong and reclinate, the anterior pair long and strong; ocellars long; outer verticals almost as long as the verticals. Pollen of mesonotum somewhat paler, the vittae less distinct.

TYPES.—Holotype, male, allotype, female, and paratype, female. Barberton, South Africa, May 21 and 15, 1913 and 1914 (H. K. Munro). Types returned to Mr. Munro.

Helina subsetosa, new species

Rusty reddish yellow, the mesonotum with a grayish median vitta, the abdomen brown on the apical half. Length, 6.5 mm.

MALE.—Head black in ground color, the face, upper part of the cheeks and the occiput above the oral opening, reddish or yellowish. Pollen white, cinereous on the occiput. Front very narrow, with three pairs of frontals anteriorly and a pair of hairs in front of the ocelli; ocellars long; verticals scarcely differentiated. Frontal vitta brownish red, obsolete for half its length. Cheeks slightly wider than the third antennal segment; parafacials linear. Palpi yellowish. Antennae dull orange, the third segment broadly blackish apically; arista long plumose, black, with the base very broadly yellowish.

Thorax yellow with whitish pollen, the mesonotum pale orange with a broad median blackish vitta that extends well onto the scutellum, the pollen yellowish, but gray on the dark vitta; four narrow and not prominent rusty reddish vittae, the inner ones bordering the dark stripe. Acrosticals 0-1; dorsocentrals 2-4; prealar almost two-thirds as long as the following bristle; sternopleurals 1-2. Hair wholly black. The dorsum of the scutellum is practically all gray, the sides and apex pale.

Legs reddish yellow, the anterior tibiae without median bristle, the posterior femora with only five or six antero-ventral bristles. Tarsi black. Anterior coxae wholly black haired.

Wings cinereous hyaline; costal spine small and appressed; third vein with two setulae near the base on the under surface. Squamae cinereous hyaline, with pale border. Halteres yellow.

First two abdominal segments yellowish, the second with a pair of faint darker spots; third and fourth brownish above, with mostly brownish tinged pollen, and

with indications of paired, brown spots; pollen on basal segments cinereous or cinereous yellow. Third segment with two or three pairs of discals toward the sides, the fourth with an interrupted row. Apex of abdomen yellowish, the venter yellow; hair black.

HOLOTYPE.—Male, Salisbury, Southern Rhodesia, February 12, 1935, No. 4036 (A. Cuthbertson).

***Helina rhodesiana*, new species**

Rusty reddish yellow, the mesonotum with a median gray vitta; abdomen partly blackish. Length, 7 to 7.5 mm.

MALE.—Head black in ground color, the facial depression more or less extensively yellow, the ridges reddish or yellowish; pollen white, cinereous on the occiput. Front distinctly wider than the ocellar triangle, the black vitta obsolete for more than one-third its length; four or five pairs of frontals anteriorly and a pair of hairs in front of the ocelli; ocellars long; verticals scarcely developed. Cheeks conspicuously wider than the third antennal segment; parafacials quite narrow. Palpi and antennae pale orange; arista black, long plumose, the base broadly yellow. Proboscis brown and brownish red. Eyes bare.

Thorax yellow, the dorsum reddish yellow, with a broad black median vitta extending onto the scutellum but sometimes abbreviated in front. Pollen whitish, grayish on the dark vitta, a linear brown vitta overlies the posterior half of the gray stripe. Acrosticals 0-1; dorsocentrals 2-4; prealar almost two-thirds as long as the following bristle; sternopleurals normally 1-2, a weak one sometimes present below the anterior bristle. Dorsum of the scutellum almost wholly dark, the sides and apex pale. Hair wholly black.

Legs reddish yellow or yellow; the tarsi black; anterior tibiae without median bristle; posterior femora with five or six anteroventral bristles. Front coxae with fine yellow hairs in addition to the strong black hairs and bristles.

Wings with cinereous yellow tinge; costal spine small and appressed; third vein with two setulae below near the base. Squamae rather whitish, with pale border. Halteres yellow.

Basal two abdominal segments yellowish in ground color, the second with a pair of brownish spots posteriorly near the middle; third and fourth segments blackish or brown in ground color, the abdominal pollen cinereous, the apical segments each with paired brownish spots which are not conspicuous; bristles mostly arising from brown spots. Third segment with broadly interrupted row of discals, the fourth with complete row. Apex of abdomen and the sternites yellowish.

TYPES.—Holotype, male, and paratype, male, Gurungwe, Southern Rhodesia, July, 1933 (A. Cuthbertson).

***Helina plurinotata* Stein**

Mydaea plurinotata STEIN, 1914, 'Voy. Allauad and Jeann., Dipt.,' p. 111 (Br. E. Afr.).

Five males and one female, Addis Ababa, Abyssinia, July 18, 19, 1920 (B. Brown).

In his check list of Muscidae, Stein placed this species as a synonym of *trimaculata* Stein. If I have correctly placed the species, the two are

very distinct, *trimaculata* belonging to *Idiopygus* Malloch. The present species is a typical *Helina* and has the fifth sternite with a deep V-shaped apical emargination.

***Helina quadriseta* Adams**

Spilogaster quadriseta ADAMS, 1905, Kans. Univ. Sci. Bull., III, p. 203.

Female, New Hanover, South Africa, August, 1914 (C. B. Hardenberg); female, Lake Side, Cape Province, May 25, 1927 (H. K. Munro).

This is a small species with short but distinct prealar bristle and paired abdominal spots. The types are in the University of Kansas.

***Helina versatilis*, new species**

Black, with cinereous pollen, the legs mostly reddish; abdomen with paired spots. Length, 6 to 7 mm.

MALE.—Head black in ground color, cinereous white pollinose, the occiput cinereous. Front slightly wider than the ocellar triangle, the black vitta distinct on its whole length; eight or nine pairs of frontals which decrease in length posteriorly, those in front of the ocelli hairlike and very short; ocellars long; verticals not developed. Cheeks twice as wide as the third antennal segment, the parafacials about three-fourths as wide. Palpi and antennae blackish; the arista with moderately long rays.

Thorax black, cinereous pollinose, the mesonotum with four narrow blackish brown vittae, the posterior half of the mesonotum and the scutellum sometimes with brownish-yellow pollen. Scutellum wholly black in ground color or with the apex more or less broadly dark reddish, the apical half sometimes reddish. Acrosticals 0-1; dorsocentrals 2-4; prealar very weak, sometimes scarcely differentiated; sternopleurals 2-2.

Legs reddish, the coxae and tarsi black, the former cinereous pollinose; anterior femora almost all black, with cinereous pollen. Anterior tibiae without posterior bristle.

Wings cinereous hyaline, with more or less brown tinge; costal spine appressed. Squamae grayish white. Halteres yellow.

Abdomen thickly cinereous pollinose, the second and third segments each with rather small, brown, paired spots. Third segment with a few discals laterally, the fourth with an interrupted row. Genitalia sometimes partly reddish.

TYPES.—Holotype, male, paratypes, two males, Salisbury, Southern Rhodesia, November 11, 1936 and September, 1936 (A. Cuthbertson).

This species greatly resembles *latifrons* Adams but is larger, lacks the bristle on the front tibiae and has many more frontal bristles. It is readily distinguished from *quadriseta* Adams, of which I have seen the type, by its larger size and reddish legs.

***Helina latifrons* Adams**

Spilogaster latifrons ADAMS, 1905, Kans. Univ. Sci. Bull., III, p. 204.

Mydaea acuta STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 503 (Abyssinia, Natal).

Eight specimens of each sex, Barberton, Transvaal, May, 1913, 1914; male and three females, Pretoria, Transvaal, February, 1912, April and May, 1919; two females, East London, Cape Province, February 15, 16, 1919; male, Peddie, South Africa, September 27, 1921 (H. K. Munro); two males and a female, Salisbury, Southern Rhodesia, January, May and September, 1929; two females, Lomagundi, Southern Rhodesia, May, 1931 (A. Cuthbertson); also four types of *latifrons*, male and female, Bindura, Southern Rhodesia, May, 1932; three females, Victoria Falls, Southern Rhodesia, June 3, 1932; four females, Salisbury, Southern Rhodesia, April and June 15, 1932 (A. Cuthbertson).

The legs vary in color, sometimes only the tibiae being reddish, at other times the femora reddish with the anterior pair mostly black.

***Helina lenta*, new species**

Black, the mesonotum with two whitish vittae divided by a brown one; wings tinged with brown. Length, 6 mm.

MALE.—Head and appendages wholly black; pollen white on the face and cheeks, cinereous on the occiput, with brown tinge on the linear parafrontals. Front as wide as the ocellar triangle, the vitta opaque black; four pairs of frontals confined to the anterior half; ocellars broken off. Cheeks about twice as wide as the third antennal segment. Arista long plumose. Eyes bare.

Thorax wholly black in ground color. Lower half of the pleura cinereous pollinose, the upper half mostly brown. Mesonotum with a pair of broad, cinereous white vittae separated by a brown one that is margined with opaque black on the anterior half; lateral margins broadly cinereous except posteriorly, the space between the dorsocentral and lateral pale vittae appears black from dorsal view but is brown pollinose and appears brown from lateral view. The dorsocentral vittae are scarcely evident from anterior view. Scutellum cinereous, with narrow, brown triangle on the basal half. Prescutellar acrosticals weak; dorsocentrals 2-3; prealar absent; sternopleurals 2-2.

Legs black, the tibiae brownish; front tibiae with a distinct median bristle; hind tibiae with three anterodorsal and two anterior bristles.

Wings tinged with brown; costal spine small and appressed. Squamae translucent grayish, with pale yellowish border. Halteres yellow.

Abdomen with grayish-brown pollen; the second and third segments each with pair of small dark spots and there is a weak, interrupted median brown vitta. The abdominal hair is erect and there are discals on the third and fourth segments.

HOLOTYPE.—Male, Burunga, Congo (J. Bequaert).

I place this species tentatively in *Helina*. The absence of the prealar bristle and the very weak prescutellars indicate that it possibly belongs elsewhere.

SPILARIA SCHNABLE AND DZIEDZICKI

This genus differs from *Helina* in having hair beneath the posterior spiracle. Examples of three of the five recognized species are before me.

TABLE OF SPECIES

- 1.—Palpi black.....3.
- Palpi red to dark brownish red.....2.
- 2.—Abdomen yellowish in ground color, with darker paired spots.....*rufina* Stein.
- Abdomen black in ground color.....*punctifer* Malloch.
- 3.—Posterior crossvein almost evenly infuscated on its whole length, or scarcely clouded.....4.
- Posterior crossvein with a roundish, brown spot at either end.....
-*trinubilifera* Malloch.
- 4.—Abdomen reddish yellow in ground color; antennae pale yellow.....*rufina* Stein
- Abdomen blackish in ground color; antennae mostly black.....5.
- 5.—Third antennal segment about four times as long as the second...*africana* Malloch.
- Third segment much less than three times as long as the second...*mollis* Stein.

Spilaria rufina Stein

Spilogaster rufina STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 48.

Mydaea rufina STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 499.

Female, Barberton, Transvaal, May 19, 1920 (H. K. Munro); two females, Durban, Natal, April 9, 1921 and July 9, 1924 (collector ?); male, Betala, Liberia, October 13, 1926 (J. Bequaert).

Spilaria punctifer Malloch

MALLOCH, 1921, Ann. Mag. Nat. Hist., VIII, p. 227.

MALLOCH, 1921, Ann. Mag. Nat. Hist., VIII, p. 449.

Female, East London, Cape Province, March 4, 1923 (H. K. Munro); 2 females, Inyanga, Southern Rhodesia, November, 1933 (A. Cuthbertson).

Spilaria mollis Stein

Spilogaster mollis STEIN, 1906, Berl. Ent. Zeitschr., LI, p. 55 (S. Africa).

Mydaea hirticeps STEIN, 1913, Ann. Mus. Nat. Hung., XI, p. 486, (Natal, Southern Rhodesia).

MALLOCH, 1921, Ann. Mag. Nat. Hist., VIII, p. 227.

Two males, Elliot, South Africa, May 12, 1924; male, Pretoria, Transvaal, August 13, 1913 (H. K. Munro); male and female, P'stroom, S. Africa, August 17, 1910; female, New Hanover, Natal, August 12, 1913 (Geo. C. Maines); male, New Hanover, September 11, 1915 (C. B. Hardenberg); female, Pretoria, June 19, 1919 (collector ?); male, Pretoria, January 23, 1927 (D. Webber); female, Bloemfontein, Orange River Province, August 10, 1917 (collector ?); three males, one female, Salisbury, S. Rhodesia, September, 1929 and September 20, 1932 (A. Cuthbertson).

